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ABSTRACT

The Degrees of Reading Power (DRP) Pilot Project was implemented at 13 New York City high schools during the 1985-1986 school year. The project involved training English Instructional Services (EIS) teachers in techniques for teaching reading holistically and then assessing the improvement on the DRP reading comprehension test. During the 1986 spring term, the DRP test began to be used to assess students' reading in grades 9 and 10 throughout New York City high schols. The pilot project clearly improved EIS staff capacity to fill the greater need for DRP training anticipated for the 1986-86 school year. It allowed them to improve methodology in advance of any widespread adoption of holistic reading techniques by teachers who had previously used a specific reading skills approach in remedial reading classes. Student outcome data indicated that the pilot project was successfully implemented. Pilot project students showed greater overall improvement than control group students (whose classes focused on specific reading skills) on both the DRP test and the Wisconsin Design Test, a criterion-referenced assessment of specific reading skills. Based on the results of the pilot project, it was recommended that (1) holistic teaching approaches that would help the slowest readers be explored, (2) methods be developed that would clearly define the role of educational assistants in DRP classrooms, and (3) further study be made of DRP instructional techniques as they are adopted throughout the school system. (AEW)

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# ENGLISH INSTRUCTIONAL SERVICES DEGREES OF READING POWER PILOT PROJECT 1985-86 END-OF-YEAR REPORT

OEA Evaluation Report

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## SUMMARY

English Instructional Services (E.I.S.) provides remediation in reading and writing for students who have scored two or more years below grade level or who have failed the reading and/or writing Regents Competency Tests (R.C.T.s). E.I.S. is funded by Chapter I and by Pupils with Special Educational Needs.

This report focuses on the implementation of the 1985-86 Degrees of Reading Power (D.R.P.) Pilot Project. D.R.P. students learn reading skills as they concentrate on comprehension. One E.I.S. teacher at each of 13 high schools participated. Teachers and E.I.S. staff development specialists (S.D.S.s) attended eight full-day training sessions planned by College Board staff. The D.R.P. Pilot Project involved training E.I.S. teachers in techniques for teaching reading holistically and then assessing the success of teaching efforts by measuring students' reading improvement on the D.R.P. Test, a reading comprehension test. During the spring, 1986 term, the D.R.P. Test began to be used to assess student reading in grades nine and ten throughout New York City high schools.

The Pilot Project clearly improved E.I.S. staff capacity to fill the greater need for D.R.P. training anticipated for the 1986-87 school year. It allowed them to improve methodology in advance of any widespread adoption of holistic reading techniques by teachers who had previously used a specific reading skills approach in remedial reading classes. It also prepared pilot teachers to serve as school-based resources. Teachers and S.D.S.s rated the D.R.P. Project very positively. Funded staff developed a bulletin of prereading activities for use by pilot teachers; by June, 1986, they had developed manuals on teaching reading through social studies and science. Participants considered D.R.P. methodology most effective with those reading at or above the sixth-grade level. One problem that requires attention is that, during the pilot year, teachers had not yet effectively redefined the role in the D.R.P. classroom of their educational assistants.

Student outcome data indicated that the Pilot Project was successfully implemented. Pilot students showed greater overall improvement than control group students on both the D.R.P. Test and the Wisconsin Design Test, a criterion-referenced assessment of specific reading skills. Control group students were in classes which focused on specific reading skills.

Based on the evaluation findings, it is recommended that:

- Holistic teaching approaches should be explored which would be more effective with the slowest readers.

- Methods should be developed which would clearly define the role of educational assistants in D.R.P. classrooms.

- Further study should be made of D.R.P. instructional techniques as they are adopted throughout the school system.

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# I. INTRODUCTION

## PROGRAM BACKGROUND

English Instructional Services (E.I.S.) provides remediation in reading and writing for students who have scored two or more years below grade level or who have failed the reading and/or writing Regents Competency Tests (R.C.T.s). E.I.S. is funded by Chapter I and by Pupils with Special Educational Needs (P.S.E.N.).* The Office of Educational Assessment/High School Evaluation Unit (O.E.A./H.S.E.U.) annually evaluates this program.**

This report focuses on the activities of E.I.S. staff and teachers in implementing a Degrees of Reading Power (D.R.P.) Pilot Project. The D.R.P. is a criterion-referenced test (C.R.T.)*** of reading comprehension which measures a student's ability in relation to the difficulty of the test items answered correctly.**** D.R.P. scores indicate the level of text difficulty a student can read independently or for enjoyment, the

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*A school is eligible for federal Chapter I funds if a specified proportion of its student body either qualifies for the free lunch program or belongs to a family that qualifies for Aid to Families with Dependent Children (A.F.D.C.); it is eligible for New York State P.S.E.N. funds if its student body fails to meet certain academic standards.

**Previous years' reports are available from O.E.A./H.S.E.U.

***C.R.T.s include questions arranged in a sequence of increasing difficulty. Scores indicate the level of skill a student has achieved in a specific skills area.

****The D.R.P. Test was developed by the College Board, in conjunction with the New York State Education Department, the Carnegie Corporation, and Touchstone Applied Science Associates.

level a student can read with assistance, and the level a student is unlikely to comprehend. The D.R.P. Pilot Project involved the introduction and preliminary evaluation of the D.R.P. method of teaching reading. The D.R.P. Test assesses the success of this method. Beginning in spring, 1986, the D.R.P. Test has been used to assess student reading among ninth and tenth graders throughout New York City high schools.

During the 1985-86 school year, one E.I.S. teacher of funded Model A lab classes* at each of 13 high schools participated in a D.R.P. Pilot Project consisting of training, classroom instruction, and testing.** The E.I.S. Program developed and implemented this project in conjunction with the College Board. College Board staff planned these training sessions specifically for its pilot Cognition and Comprehension Program (CADRE), in which content-area teachers from seven high schools used holistic reading techniques in their classes.

D.R.P. teachers and staff development specialists (S.D.S.s) from the E.I.S. central office attended the six full-day training sessions planned by College Board staff. Recognized authorities in the field of reading led this series of workshops on holistic reading instruction which emphasized overall comprehension,

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*Students take non-credit Model A lab classes in conjunction with a tax-levy credit-bearing class. Students in these lab classes work individually with the assistance of the teacher and an educational assistant (E.A.).

**One of these schools was an alternative career education high school, two were vocational-technical high schools, and ten were academic-comprehensive high schools.

rather than the learning of discrete reading skills. D.R.P. teachers used a holistic approach to reading in all of their funded classes. Their students and a control group of students whose teachers were using the traditional skills-based methodology took two tests at the beginning and end of each term: the Wisconsin Design Test, which is regularly used to evaluate program success; and the D.R.P. Test, which was administered independently of the regular citywide testing program.

## PROJECT OBJECTIVES

E.I.S. Program administrators identified a number of objectives for the D.R.P. Pilot Project. This report focused on the following objectives:

- To provide training workshops and continuous refinement for all pilot programs.
- To determine whether students in D.R.P. pilot classes show a greater positive change in reading scores than students in non-D.R.P. control classes, as measured by pretest and posttest scores on the D.R.P. and the Design Test.

## SCOPE OF THE STUDY

O.E.A./H.S.E.U. used observations of training sessions, site visits, interviews, workshop evaluation forms and other teacher and staff questionnaires, and an examination of curriculum materials to study the D.R.P. Pilot Project. It also analyzed pretest and posttest results on the D.R.P. and the Design Test for students in D.R.P. classes and for a control group of students in Chapter I/P.S.E.N. E.I.S. classes who were not part of the pilot group.

## SCOPE OF THIS REPORT

The O.E.A./H.S.E.U. evaluation of the 1985-86 E.I.S. Program consists of two reports. This report contains three chapters. Chapter I includes program background, project objectives, and scope of the study. Chapter II is a description of the D.R.P. Pilot Project. Chapter III presents outcome data for students in the D.R.P. Project, as well as for those in a control group. Chapter IV contains conclusions and recommendations. The second report summarizes outcome data for all students in the E.I.S. Program overall and by school.

## II. PROJECT IMPLEMENTATION

### PROJECT OVERVIEW

The traditional approach to reading in funded lab classes involves teaching and testing specific reading skills. Students learn reading skills and use their accumulated knowledge of these skills to comprehend what they read. In contrast, the D.R.P. Pilot Project focuses on comprehension. Teachers begin by preparing students for a reading assignment and then explore with them questions about the meaning of what they have read. In D.R.P. classes, students learn skills as they concentrate on comprehension.

The Pilot Project significantly altered what happened in the Chapter I classrooms of participating teachers. Usually Chapter I students work at their own pace, alone or with the teacher or E.A. The reading laboratory is designed with an individual or small-group focus: students sit at small tables and use the textbooks, worksheets, cassettes, and other material located in different parts of the room. Instruction in Chapter I D.R.P. classes, however, primarily involved full-class lessons. In the four schools visited by the evaluation team, D.R.P. classes met in regular classrooms which are designed for such an instructional mode.

E.I.S. administrators decided in spring, 1985 to adopt a holistic pilot project. They based this decision on their own experience as teachers and trainers, as well as on the latest research results and on information gained at New York State

Education Department and other conferences. They believed that focusing on comprehension was the most effective way to teach reading. Shortly after E.I.S. Program staff had made the decision to run a pilot project, a professor working with the College Board contacted them. She and the College Board were planning to set up a training, classroom implementation, and D.R.P. testing pilot project, CADRE, which would involve content area teachers from New York City high schools. E.I.S. staff decided to link its own pilot project with CADRE. They would thereby evaluate their own D.R.P. Project by using the D.R.P. Test, which was developed, in part, by the College Board. They would also participate in the training in holistic teaching methodology set up for the content area teachers.

E.I.S. staff began work on the D.R.P. Pilot Project in spring, 1985 with teacher selection and curriculum development. Before the end of the school year, staff had developed and distributed to participating teachers a collection of prereading activities to be used with a recommended textbook. In June, 1985, the CADRE coordinator and a College Board representative conducted a three-hour training session to prepare S.D.S.s for the September inception of the D.R.P. pilot. Along with CADRE teachers, D.R.P. teachers and S.D.S.s attended an orientation session at the College Board in early October; they subsequently participated in six workshops and one summation session. A list of participating teachers and S.D.S.s appears as an appendix to this report.

STAFFING

Teacher selection for the D.R.P. Project was based on S.D.S. recommendations, teacher interest and school administrators' willingness to release teachers for full-day training sessions. (Schools received funding for substitute teachers.) Three schools selected in June to take part in the project did not do so either because the recommended teachers did not teach in the fall term or because school administrators did not agree to release them for training. The D.R.P. Project added two schools not on the June list. One teacher at each of 14 high schools began the project in September. One teacher who was more comfortable with a skills-oriented approach to remediation than to a holistic methodology dropped out midway through the fall term.

Thirteen teachers participated in the entire D.R.P. Project. Teacher and S.D.S. responses to a December, 1985 O.E.A./H.S.E.U. questionnaire provided general information about project staffing. S.D.S.s (N = 14) most frequently (71 percent) identified previous teaching experience as a criterion for participant selection. Almost all of the 13 D.R.P. pilot teachers met this criterion. The D.R.P. teachers averaged 12.2 years of experience in the classroom; nearly two-thirds of them had been teaching for at least ten years. On the average, they had taught Chapter I/P.S.E.N. classes for 5.7 years and Chapter I reading labs for 5.3 years. Slightly over half (54 percent) were licensed in English, over a third (38 percent) in English and reading, and

the remainder (eight percent) in reading.

The teachers most frequently identified the following reasons for getting involved in the D.R.P. Project: wanting to learn more about teaching reading (69 percent); wanting to try something new (69 percent); and thinking that a holistic approach seemed like an effective way to teach reading (62 percent). The vast majority reported considerable (77 percent) or extensive (eight percent) prior knowledge of teaching reading holistically. Half indicated that they had first taught reading holistically prior to the September, 1985 start of the D.R.P. Project.

STAFF TRAINING

One of the S.D.S.'s key responsibilities is to provide training for funded teachers. The D.R.P. training sequence was atypical in providing training for S.D.S.s, as well as for teachers. The director of the CADRE Program and College Board staff facilitated the orientation and summation sessions. Nationally-recognized experts in the field of reading education conducted six of the workshops. A seventh planned session was cancelled because of scheduling difficulties.

The evaluation team attended the summation session and three of the six training workshops. Trainers provided educational theory and research linking student achievement in reading to a holistic teaching approach. They described various techniques teachers could use in their classes. One trainer recommended assigning structured overviews which tapped students' prior knowledge and increased motivation and preparation before they

did their homework. She also suggested that teachers develop guides based on the three levels of reading comprehension (literal, interpretative, and critical); the guides help improve student comprehension within the framework of content area material. A second trainer discussed the use of semantic maps (graphic outlines using key words) to help students understand the relationship among concepts. A third trainer focused on students' difficulty in making inferences, particularly in identifying the antecedent when it is replaced by referents like personal pronouns and locative pronouns (e.g., here, there); he connected a students' ability to make correct inferences with such comprehension skills as predicting outcomes, drawing conclusions, inferring main ideas, and inferring sequence. After the second training session, D.R.P. teachers used a portion of each workshop to share ways in which they had applied techniques they had learned at previous training sessions to their own texts and classroom settings.

At the end of every workshop but the first one, D.R.P. teachers and S.D.S.s filled out forms evaluating the session. On January, 1986 end-of-term and June, 1986 end-of-year questionnaires, they assessed the training sessions in more general terms. Their evaluation of the workshops were, almost without exception, very favorable. On both questionnaires, they assessed the training in terms of its usefulness to their own work as classroom teachers or as teacher trainers. All of the S.D.S.s and nearly all of the teachers rated the workshops as very

useful. In response to open-ended questions, both teachers and S.D.S.s indicated that the training sessions had a concrete impact on their work. Forty-two percent of the teachers responding singled out the practical nature of the strategies presented as of particular value. Ninety percent of teacher respondents noted that they made considerable classroom use of the strategies they had learned; several identified specific strategies as of notable value. Two-thirds of the S.D.S.s reported that they had used techniques learned in the training sessions as part of workshops they facilitated during the school year on reading and content area material. Responses by both teachers and S.D.S.s indicated that the training sessions increased teacher morale by treating them as professionals and giving them the opportunity to share ideas with colleagues in other schools.

Both teachers and S.D.S.s indicated that the workshops would have been even more effective if trainers had achieved a better fit between the materials they used for discussion and the reading levels of Chapter I students. The most frequently repeated criticism related to the trainers' use at several workshops of materials either too difficult for Chapter I students or designed for elementary school students. Teachers and S.D.S.s also identified repetition as a problem; because trainers prepared their workshops independently, they sometimes spent time discussing pedagogical theory or specific techniques which another trainer had gone over at an earlier session.

CURRICULUM DEVELOPMENT

By the start of the D.R.P. Project, E.I.S staff had developed and distributed to D.R.P. teachers an 18-page bulletin of prereading activities for use with Myths and Folktales Around the World, one of the recommended textbooks. The activities fall into three main categories: eliciting prior knowledge, building background knowledge, and focusing learner attention. One of these activities, the Pre Reading Plan (PReP), is a three-step instructional assessment. PReP allows teachers to determine a student's prior knowledge about a specific subject; become aware of the language a student uses to express knowledge about a given topic; and decide how much additional background must be taught before a student can successfully read the text. This and other activities involve such techniques as student-generated questions, informal discussion about experiences, word mapping, and structured overviews of a text.

By the end of the 1985-86 project year, funded staff had developed two manuals for interdisciplinary instruction: Teaching Reading Through Social Studies and Teaching Reading Through Science. Both 90-page manuals apply D.R.P. techniques to content area texts and concepts in order to make widely-used social studies and science textbooks more accessible to Chapter I students. The manuals contain reading selections, explanations of appropriate D.R.P. strategies, and appendices with suggestions for writing assignments and vocabulary development.

CLASSROOM IMPLEMENTATION

During the fall, 1985 term, 93 percent of the D.R.P. teachers used Myths and Folktales Around the World as their assigned textbook. Seventy-seven percent of these teachers gave it a very positive rating; none rated it unsatisfactorily. S.D.S.s also gave the textbook a very favorable rating: 71 percent rated it very positively, 21 percent rated it satisfactory, and 14 percent rated it as less than satisfactory. In response to an open-ended question, 54 percent of the teachers and 43 percent of the S.D.S.s identified the book's primary strength as its ability to generate student interest. A smaller percentage (46 percent of teachers and 14 percent of S.D.S.s) mentioned its appropriateness to the students' reading levels as one of its strengths. The only criticisms raised had to do with the book's focus on myths and folktales: 23 percent of the teachers observed that it did not give students practice in reading a variety of genres and 15 percent believed that it was not related to students' subject-area reading assignments. Several teachers changed textbooks during the spring term in order to address these limitations.

Teacher questionnaire responses illustrated the D.R.P. Project's effect on the percentage of reading instructional time teachers spent on an holistic approach to reading. The percentage teaching reading holistically more than half of this time jumped from 34 percent during the spring, 1985 term, to 91 percent in September, 1986. During the spring, 1985 term, only nine

percent spent more than half of their reading instructional time teaching holistically. The percentages reported for September remained stable through the end of the school year.

According to self reports, the percentage of reading instructional time teachers spent on specific skills underwent an analogous change. During the spring, 1985 term, 63 percent of the teachers spent at least half of this time teaching skills. From spring, 1985 to September, 1985, the percentage teaching skills 30 percent or less of their reading instructional time increased from 27 percent to 100 percent; it then remained constant throughout the 1985-86 school year. Sixty-two percent of the teachers reported that in September they had taught skills zero to 10 percent of their reading instructional time. By the end of the year, the percentage of those who had been teaching skills zero to 10 percent of this time increased to 90 percent.

At the end of both the fall, 1985 and the spring, 1986 terms, more than three-quarters of the teachers and more than four-fifths of the S.D.S.s rated the project as very effective or most effective (four or five on a scale of one to five). They most frequently cited student interest and good interactions among students as positive features of the project.

Eighty-three percent of the teachers reported that they felt more positively toward teaching reading holistically at the end of the fall term than they had in September; none felt less positively. Teachers attributed this attitudinal improvement primarily to the acquisition of new teaching skills, good

classroom interactions, and the opportunity to be creative in the classroom.

Teachers (67 percent) and S.D.S.s (78 percent) agreed that the D.R.P. method of instruction was particularly effective with a specific group of students. They identified this group as including students reading at or above the sixth-grade level. Teachers (73 percent) and S.D.S.s (90 percent) also agreed that D.R.P. instruction was least effective with the slowest readers.

The problem of meeting these students' needs was particularly acute in classes whose students had a wide range of reading levels. Students in one of the classes which evaluators observed at Sarah J. Hale High School, for example, read at the third- through sixth-grade levels; students in an observed class at Franklin D. Roosevelt High School read at the fourth- through ninth-grade levels; at John Bowne High School, another of the schools visited, students in a D.R.P. class read at the fourth- through sixth-grade levels. Teachers mentioned that the slower readers were frequently not finished with a reading selection when the others had done the reading, completed a worksheet, and were ready for a discussion of the assignment.

The other frequently-cited problem in project implementation involved use of the E.A.s. With the inception of the Pilot Project, they had to take on classroom responsibilities different from those they had performed in Chapter I lab classes. The problem was compounded by the E.A.s' general lack of familiarity with teaching reading holistically prior to the project's start.

In questionnaire responses, over half of the teachers indicated that at the beginning of the 1985-86 school year their E.A. had no (23 percent) or limited (31 percent) knowledge of holistic teaching methodology.

In the D.R.P. classes, the E.A.'s responsibilities had to be redefined. Students in these classes worked in a whole-class setting, rather than at their own pace as they did in lab classes. Unlike the lab classroom, the D.R.P. classroom was not set up to facilitate individual or small-group work. Teachers had to rethink classroom management issues so that the E.A. could assist slow readers and help absentees catch up without distracting those students involved in the whole-class lesson. S.D.S.s indicated that, for the most part, teachers were unsure how to use their E.A.s in the D.R.P. classes. However, one S.D.S. noted that in her assigned school, with the introduction of the D.R.P. Project, the E.A.'s role got stronger; she attributed this change to the presence in the D.R.P. classes of many low-level readers, a very experienced E.A., and a long working relationship between the teacher and the E.A.

At the end of the project year, 40 percent of the teachers reported that their E.A. had worked with groups of students more in the spring term than in the fall term. Half of the teachers noted that they planned to have their E.A. do more work with groups of students during the fall, 1986 term. Fifty percent of the S.D,S.s indicated that teachers would benefit from having more suggestions as to how to use their E.A.s most effectively.

## III. STUDENT OUTCOMES

The evaluation team analyzed student outcomes using the D.R.P. and Wisconsin Design Tests. The D.R.P. is a criterion-referenced test of reading comprehension. It establishes the readability of a text on the basis of such linguistic variables as word length, sentence length and complexity, and frequency of commonly-used words. The Wisconsin Design Test is an English-syntax C.R.T. of specific reading skills. Both tests can be used to diagnose student needs and to assess student improvement.

The evaluation team analyzed pilot and control group students' performance on the D.R.P. Test and on the Wisconsin Design Test given in fall, 1985 and spring, 1986 to assess the project's achievement objective, as well as differences in achievement on the two types of tests. A total of 3,489 students from 19 high schools participated in the project; 69 percent were in the pilot group and 31 percent were in the control group. Valid grade-level information was available for 57 percent of the students; 31 percent were ninth graders, 41 percent were tenth graders, 21 percent were eleventh graders, and seven percent were in the twelfth grade. Slightly more ninth graders and slightly fewer twelfth graders were in the pilot group, although, on the whole, the percentage of students in each grade was similar for the pilot and control groups, suggesting that findings can be generalized across both groups. Complete pretest and posttest D.R.P. test data were available for half of these students while complete Design Test scores were available for 54 percent.

Generalizations beyond the sample should be made with caution.

As indicated in Table 1, among students with complete D.R.P. data, pilot group students showed a greater increase in D.R.P. units than control group students. Scores for students in the pilot group increased 5.2 D.R.P. units (S.D.=6.3) from pretest to posttest (effect size=.81).* Students in the control group also showed progress from the pretest to the posttest, increasing 3.6 D.R.P. units (S.D.=6.4; E.S.=.56). According to the College Board, average annual growth for students from grades four through twelve is about four D.R.P. units, with the fastest growth occurring in the lower grades. Students in grades nine through twelve are therefore likely to improve fewer than four D.R.P. units. The increases shown by pilot and control group students must be seen in this context.

Results of the analyses of Design Test scores showed similar, though less substantial trends. As indicated in Table 2, students in the pilot group mastered 2.6 more skills objectives (S.D.=5.3) on the posttest than on the pretest (E.S.=.48). Students in the control group mastered 1.8 more skills objectives (S.D.=4.7) on the posttest than on the pretest (E.S.=.39).

A multiple analysis of variance detected differences between

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*Effect size (E.S.), developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gains. This ratio provides an index of change in standard deviation units regardless of the size of the sample. According to Cohen, 0.2 is a small E.S.; 0.5 is a moderate E.S.; and 0.8 is a large E.S. Only effect sizes of 0.8 and above are considered educationally meaningful.

TABLE 1

D.R.P. Test Results
for Students Receiving E.I.S. Services

| | N* | Raw Score | S.D. | Mean Difference | S.D. Difference | Effect Size** |
|---|---|---|---|---|---|---|
| Pilot Group: | | | | | | |
| Pretest | 1,267 | 64.5 | 8.5 | 5.2 | 6.3 | .81 |
| Posttest | | 69.7 | 9.7 | | | |
| Control Group: | | | | | | |
| Pretest | 400 | 66.5 | 8.2 | 3.6 | 6.4 | .56 |
| Posttest | | 70.1 | 8.7 | | | |

*Includes all students who had valid achievement information for both the pretest and the posttest.

**Effect size (E.S.), developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gains. This ratio provides an index of change in standard deviation units regardless of the size of the sample. According to Cohen, 0.2 is a small E.S.; 0.5 is a moderate E.S.; and 0.8 is a large E.S. Only effect sizes of 0.8 and above are considered educationally meaningful.

- Pilot group students' improvement from the pretest to the posttest is of substantial educational significance, and was nearly two D.R.P. units higher than the improvement of students in the control group.

TABLE 2

Wisconsin Design Test Results
for Students Receiving E.I.S. Services

| | N* | Raw Score | S.D. | Mean Difference | S.D. Difference | Effect Size** |
|---|---|---|---|---|---|---|
| Pilot Group: | | | | | | |
| Pretest | 1,315 | 10.3 | 4.4 | 2.5 | 5.3 | .48 |
| Posttest | | 12.8 | 6.0 | | | |
| Control Group: | | | | | | |
| Pretest | 515 | 11.1 | 5.0 | 1.8 | 4.7 | .39 |
| Posttest | | 12.9 | 6.2 | | | |

*Includes all students who had valid achievement information for both the pretest and the posttest.

**Effect size (E.S.), developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gains. This ratio provides an index of change in standard deviation units regardless of the size of the sample. According to Cohen, 0.2 is a small E.S.; 0.5 is a moderate E.S.; and 0.8 is a large E.S. Only effect sizes of 0.8 and above are considered educationally meaningful.

- Pilot group students mastered an average of 2.6 more objectives on the posttest than on the pretest, a gain of moderate educational significance. Control group students mastered 1.8 more objectives on the posttest than on the pretest.

- The difference between students in the control and pilot groups on the Design Test was significant, i.e., F-statistic = 14.31 (df=1,1251); $p < .001$.

the pilot and control group on the D.R.P. and Design Tests. Scores of the two groups differed significantly on the D.R.P. Test [$F(1,1109)=8.64$; $p < .003$]. They also differed significantly on the Design Test [$F(1,1251)=14.31$; $p < .001$]. Pilot students improved significantly more than control group students on both tests.

An additional analysis determined the percentage of students whose scores improved from the pretest to the posttest on both the D.R.P. and Design Tests. Sixty-three percent of pilot students and 46 percent of control students improved on both tests.

The overall greater improvement of pilot students indicates that the methodology used in D.R.P. Pilot Project was effective, although generalizing beyond the sample for which there are complete results is risky. The greater success of pilot students on the Design Test is particularly noteworthy, because it specifically tests reading skills rather than reading comprehension. The comprehension focus of D.R.P. classes raised the possibility that specific reading skills would suffer. Although pilot classes focused on comprehension, rather than skills, pilot students also learned specific reading skills.

The success of the Pilot Project illustrates the potential viability of a holistic approach to teaching reading. It is not possible to generalize on the basis of student achievement. Although pilot students with complete results showed substantial and educationally meaningful gains, no assessment could be made

of the achievement of nearly one-half of the pilot students (43 percent) who lacked complete results. In addition, several factors which are not integral to D.R.P. methodology might have influenced student outcomes. Although students were randomly selected for the Pilot Project, teachers were chosen specifically for experience and interest in the D.R.P. approach. In addition, students might have been positively affected by teachers' enthusiasm for doing something new in the classroom, as well as by their own sense of participating in a "special" project. Nevertheless, the project was an effective pilot which bodes well for the adoption of D.R.P. methodology throughout the school system.

## IV. CONCLUSIONS AND RECOMMENDATIONS

The 1985-86 D.R.P. Pilot Project provided teachers and S.D.S.s with a valuable grounding in holistic reading techniques. With the introduction citywide during the 1985-86 school year of the D.R.P. Reading Test to assess reading improvement, the Pilot Project should have a positive impact throughout New York City high schools on the way reading is taught. Most S.D.S.s have already begun to incorporate D.R.P. teaching methodology into training sessions for teachers who did not participate in the Pilot Project. As they begin to administer the D.R.P. Reading Test and to understand its underlying educational philosophy, these teachers are likely to need considerably more training in holistic reading techniques. The Pilot Project has clearly improved the capacity of E.I.S. staff to fill that need. At the same time, the 13 pilot teachers received both the training and the classroom experience to enable them to serve as resources for other teachers at their schools.

The Pilot Project also allowed S.D.S.s and teachers to assess strengths and weaknesses in advance of any widespread adoption of holistic reading techniques. They could thereby speak from concrete experience about student interest and interactions, particularly among those reading at or above the sixth-grade level. They could communicate as well their own positive attitudes about this reading methodology. In addition, both teachers and S.D.S. can find it valuable to identify and address those areas which need improvement or particular

attention: the difficulties of using holistic reading techniques with the slowest readers; the particular management problems in classes whose students have a wide range of reading levels; and the redefinition of responsibilities for E.A.s working in a D.R.P. classroom.

D.R.P. methodology and the curriculum developed in conjunction with the Pilot Project contributed to breaking down the often-assumed division between learning specific reading skills and learning substantive content. The two manuals developed thus far by E.I.S. staff on teaching reading through social studies and science encourage students to perceive reading as helping them in different classes. Students particularly interested in science, for example, can become more motivated to learn reading skills once they recognize how those skills can increase a science textbook's accessibility.

Student outcomes, observations, and interviews with teachers and S.D.S.s indicate that the Pilot Project was successfully implemented. Pilot students showed greater overall improvement than control students on both the D.R.P. and Wisconsin Design Tests. Moreover, pilot students showed an increase in D.R.P. units which is of substantial educational significance. They also did better than the control group students on the Wisconsin Design Test, which assesses specific reading skills, even though instruction in pilot classes focused on reading comprehension, rather than basic reading skills. This outcome supports a basic D.R.P. premise: reading skills can be effectively taught by

concentrating on reading comprehension. A definitive general assessment of the D.R.P. approach to reading in the New York City high schools cannot, however, be made on the basis of pilot student outcomes, which might have been influenced by aspects of the Pilot Project that are not integral to D.R.P. methodology. Nonetheless, these findings do indicate its potential in teaching both comprehension and specific skills to high school students.

Based on the evaluation findings, it is recommended that:

- Holistic teaching approaches should be explored which would be more effective with the slowest readers.
- D.R.P. classroom management strategies should be developed for use in classrooms whose students have a wide range of reading levels.
- Methods should be developed which would clearly define the role of E.A.s in D.R.P. classrooms.
- Further study should be made of D.R.P. instructional techniques as they are adopted throughout the school system.

APPENDIX
LIST OF PARTICIPANTS

Central Staff

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|---|---|
| Leonard Kantrowitz | Program Manager, English Instructional Services |
| Mimi Chodosh | Assistant to the Program Manager |

| Schools | Teachers | Staff Development Specialists |
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| Boys & Girls | Barry Weiss | Ralph Cappell |
| Franklin D. Roosevelt | Anne Petsas | Rose Marie Curley |
| Sarah J. Hale | Janet Mann | Roberta Koza |
| Sheepshead Bay | Regina Perlin | Anthony Magarello |
| Morris | Sally Bush | Jerry Henkin |
| Samuel Gompers | Peter Mayer | Catherine Butler |
| August Martin | Brenda Miles | Mary Poe |
| Aviation | Joyce Magnavito | Helen McConnell |
| Forest Hills | Harry Silverman | Frank Curley |
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